

PERSPECTIVE TAKING: THE EFFECT OF SELF-ENHANCING AND SELF-DEFEATING
HUMOR IN A STRESSFUL SITUATION

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ABSTRACT

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Previous research has shown that individual differences in humor styles impact people's psychological well-being (Martin, Puhlik-Doris, Larsen, Gray and Weir, 2003). The present study expands on previous research by conceptualizing humor styles as a situational variable; I treated humor style as an independent variable in an experiment rather than as a personality variable in a correlational study. I hypothesized that people induced to engage in self-enhancing humor would report less state anxiety associated with a stressful event, more positive state self-esteem, and more positive and less negative affect. I hypothesized that people induced to engage in self-defeating humor would report the opposite effects. Participants engaged in a role-play exercise imagining they were about to take a stressful math test. Compared to participants in a control condition, those who were exposed to and engaged in self-enhancing humor reported less state anxiety associated with the test, increased state self-esteem and less negative affect. Contrary to my hypothesis, exposure to and engagement in self-defeating humor had no effects relative to the no-humor control condition.

CHAPTER ONE: INTRODUCTION

“Humor is mankind's greatest blessing.”

- Mark Twain

“Your sense of humor is one of the most powerful tools you have to make certain that your daily mood and emotional state support good health.”

- Paul E. McGhee

As the quote by Mark Twain suggests, common folk wisdom has long held that humor is good for you. With positive psychology’s increasing prominence over the past 20 years, researchers have taken an interest in the psychological benefits of humor. Accordingly, researchers have begun to verify what happy people already implicitly know. Humor is an antidote to the emotional toll of stress and challenges in everyday life; humor lightens your burdens, and connects you to others (Celso et al., 2003; Kuiper & Martin, 1998). Quite simply, experiencing humor in daily life makes people healthier and happier.

Martin, et al., (2003) extended our folk wisdom and emerging scientific knowledge about the psychological benefits of humor. Martin et al. (2003) proposed that people have different humor styles; that is, they differ in the ways they habitually use humor in daily life. Importantly, different humor styles are thought to have different personal and interpersonal outcomes. Most notably for the proposed research, people with a self-enhancing humor style tend to use humor as a way to cope with difficult circumstances. People who use humor for self-enhancement experience the greatest psychological benefits of humor. They experience greater happiness and lower levels of depression following negative life events compared to those with low levels of self-enhancing humor (Martin et al., 2003).

To this point investigations of the relationship between humor styles and psychological outcomes such as happiness or subjective well being, have conceptualized humor styles strictly as a personality variable. Some fortunate people happen to have been blessed with a personality that includes a self-enhancing humor style enabling them to find happiness even in the face of adversity. In the proposed research I consider the novel possibility that humor styles can be conceptualized as a situational variable, and that people (regardless of their dispositional humor style) who engage in self-enhancing humor in a given situation will report more positive subjective well-being, greater state self-esteem and less state anxiety.

CHAPTER TWO: LITERATURE REVIEW

Happiness (Subjective Well-Being)

Positive psychology is a branch of psychology that emphasizes the study of emotions and traits that enable people to lead happy, fulfilling lives (Gable & Haidt, 2005). The term “positive psychology” first appeared in Maslow’s 1954 book, *Motivation and Personality*. And in the 1960s and 70s, humanistic psychologists such as Maslow and Rogers emphasized the importance of studying human potential and self-actualization. In 1998, Martin Seligman, president of the American Psychological Association, called for a revival of these humanistic approaches coupled with more rigorous research methodologies. He argued that psychology had historically overemphasized an understanding of human pathology (i.e., what can go awry in individuals, families, groups and institutions) and neglected the study of human strengths and flourishing (Gable & Haidt, 2005). Thus, the emergence of a modern positive psychology has shifted the focus of emotion research from the traditional emphasis on negative emotions (e.g., depression, anxiety, anger) to include positive emotions such as happiness, optimism, joy, gratitude, and love.

Happiness is a complex construct. It is obvious and unmistakable; people generally know and can readily report whether they are happy or not (Lyubomirsky & Lepper, 1999) yet they find it difficult to precisely define (Freedman, 1978; Lyubomirsky, Tkach, & Dimatteo, 2006). The term happiness has many different meanings in popular culture; researchers traditionally have preferred the term, “subjective well-being” (Diener, Scollon, & Lucas, 2004). Reflecting the intricacy of happiness, researchers generally define subjective well-being (SWB) as a multifaceted construct, containing both a cognitive component—a subjective appraisal of life

satisfaction, and an affective component—the relative preponderance of positive and negative emotions one experiences (e.g., Diener, 2009; Myers & Diener, 1995; Emmons & Diener, 1985; Lyubomirsky et al., 2006). Psychologists have used self-report questionnaires to measure SWB. Myers and Diener (1995) for instance, measured SWB with questions such as “How satisfied are you with your life as a whole these days?” and “Are you very satisfied?” Happy people, those high in SWB, report more positive than negative thoughts and feelings about their lives (Myers & Diener, 1995).

Research on the correlates of happiness has long been guided by a “bottom-up approach emphasizing the impact of external life events and demographic variables (Diener, 1984). Consistent with this bottom-up approach, research has shown that desirable life events (e.g., marriage, birth of a child) are associated with positive affect; whereas undesirable life events (e.g., divorce, health problems) are associated with negative affect (Stallings, Dunham, Gatz, Baker & Bengtson, 1997). However, it appears that people adapt to positive and negative events, and over time approach previous levels of overall happiness (Brickman & Campell, 1971; Headey & Wearing, 1992). In their classic study, for instance, Brickman, Coates and Janoff-Bulman (1978) found that people adapted their level of happiness after even an extremely positive life event—winning the lottery—or an extremely negative life event —becoming paralyzed (See also Silver, 1982; Suh, Diener, & Fujiata, 1996).

Similarly, demographic variables and quality of life indices (e.g., sex, race, age, education level, marital status, religious faith, income) appear to have only a modest relation with long-term reports of life satisfaction (e.g., Argyle, 1999; Andrews & Withey, 1976; Campbell, Converse, & Rodgers, 1976; Diener, Lucas, & Scollon, 2006). Campbell et al.

(1976), for instance, reported that only 17% of the variance in life satisfaction could be explained by 10 demographic variables.

Collectively, these “bottom up” findings highlight the importance of an alternative “top-down” approach (Diener, 1984) that seeks to explain differences in happiness among people through stable personality traits. A large body of research has accumulated showing that personality traits are perhaps the most important correlates of happiness, explaining more of the total variance in happiness than demographic variables and quality of life indices (e.g., Andrews & Withey, 1976; DeNeve and Cooper, 1998; Diener et al., 1999; Guitierrez, Jimenez, Hernandez, & Puente, 2004). Recent research suggests that humor styles represent one such important personality correlate of SWB.

Humor Styles

Historically, researchers have regarded sense of humor as an exclusively adaptive and positive unitary disposition (Cann, Stilwel, & Taku, 2010). Martin, Puhlik-Doris, Larsen, Gray and Weir (2003), however, distinguished between *four* humor styles. Two of the humor styles, *affiliative* and *self-enhancing* are positive or beneficial to the self or others; the other two, *aggressive* and *self-defeating* are negative or detrimental to the self or others. Furthermore, Martin et al. (2003) developed a 32-item Humor Styles Questionnaire (HSQ) to assess the four humor styles.

Martin et al. (2003) described humor styles as distinctive uses or styles of humor, functions, forms, or styles of humor, and ways in which people use humor. Accordingly, humor styles are part of one’s personality in that they constitute stable patterns of humor-related behaviors and attitudes (Martin, et al., 2003). Although people can intentionally use humor to achieve certain interpersonal goals, humor styles do not reflect a conscious attempt to use humor

for specific purposes. Rather, humor styles are conceptualized as a trait-like defense mechanism; they reflect the ways people habitually, spontaneously and perhaps unconsciously use humor in daily life (Martin, 2015; Martin et al., 2003).

People who engage in an affiliative humor style use humor in order to enhance and ease social relationships. This humor is characterized as being essentially tolerant and benign. It may include gentle teasing or self-deprecating humor, such as using banter, and is used in order to amuse others or make light of a tense situation (sample item from HSQ: “I enjoy making people laugh.”). Because the use of affiliative humor affirms both the self and others, it is associated with greater intimacy in interpersonal relationships (Martin et al., 2003) and greater conflict resolution in dating couples (Campbell, Martin, & Ward, 2008).

Self-enhancing humor involves a generally humorous outlook on life, a tendency to be frequently amused by the incongruities of life, and to maintain a humorous perspective even in the face of stress or adversity (Kuiper, Martin, & Olinger, 1993). Martin et al. (2003) stated that self-enhancing humor was closely tied with emotion regulation, and the use of humor to cope with stressors and negative life events (sample items from HSQ: “If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better,” “Even when I’m by myself, I’m often amused by the absurdities of life.”). Not surprisingly, then, Martin et al. (2003) found that self-enhancing humor positively relates to positive emotions such as cheerfulness, self-esteem, optimism, and subjective well-being.

On the negative side, people who engage in aggressive humor tend to be sarcastic and ridicule other people without minding its offensive potential. They may try to use humor as a means of manipulation (sample item from HSQ: “If I don’t like someone, I often use humor or teasing to put them down.”). This humor style was found to be more present in men than in

women. Kuiper et al. (2010) found that aggressive humor styles have the most detrimental effect on those who are recipients of those comments. Kuiper et al. (2010) also found that those who receive aggressive humor comments also give the lowest cognitive reappraisals of the situation. That is, the participants felt the most negative about receiving aggressive humor comments, which also made them sadder.

Finally, self-defeating humor is a humor style directed against oneself. Individuals belittle and put themselves down through humor in order to get others' recognition or to gain favor with others (sample item from HSQ: "I often go overboard in putting myself down when I am making jokes or trying to be funny."). Martin et al. (2003) originally thought of self-defeating humor, a maladaptive humor style, as a buffer or defense mechanism that people could use to retreat away from negative situations. Instead of an adaptive purpose that the self-defeating humor style first was hypothesized to create, it appears to have maladaptive purposes as it lowers subjective well-being instead of raising it. Kuiper and McHale (2009) found that self-defeating humor mediates the relationship between endorsement of negative self-evaluative beliefs and low social self-esteem. In general, people with lower self-esteem are more likely to have and express self-deprecating thoughts (Stieger et al., 2011).

Martin et al. (2003) noted that the humor styles could overlap due to the broadness of the constructs. Namely, an affiliative humor comment within one's group may have some mildly aggressive humor undertones of those who are outside of the group. Consistent with this idea, Cann, Stilwell and Taku (2010) found a weak positive correlation between aggressive and affiliative humor styles. Furthermore, Kuiper et al. (2010) found that participants perceived affiliative humor comments as more aggressive than self-defeating humor comments. Participants were asked to imagine they were interacting with a casual friend or a teacher's

assistant (TA). The conversations were different depending on whom the participant was interacting with. With the TA, the conversation was about a recent test the subject did not score well on. With the casual friend, the conversation was about recent relationship problems the participant had. Both conversations had some element of a stressful situation due to the severity of the problem being talked about.

Kuiper et al. (2010) used all the humor styles but aggressive humor to compare between all three conditions. Kuiper et al. (2010)'s finding of affiliative humor being perceived as more aggressive may provide backing for the correlations between aggressive and affiliative humor found by Cann, Stilwell and Taku (2010) and the theory of overlap between aggressive and affiliative humor and underlying aggressive tones in affiliative humor proposed by Martin et al. (2003). In contrast Kuiper et al. (2010) did find positive effects of adaptive humor comments (happier mood, greater acceptance and greater desire to continue interacting) but found these effects to be significantly greater when using self-enhancing humor.

Guided by the emergence of positive psychology, humor theorists began to consider the ways that humor as a personality variable (e.g., sense of humor, humor styles) relates to positive emotions. Studies have consistently shown that positive and negative humor styles differentially relate to emotions. Researchers have paid particularly close attention to the relationship between humor styles and SWB as well as specific manifestations of SWB such as self-esteem, optimism, lack of depression and anxiety.

Humor Styles and SWB

Martin et al.'s (2003) model has greatly elucidated the complex and often counter-intuitive relationship between humor and well-being. It has revealed that, depending on how it is used in daily life, humor can positively or negatively relate SWB. See Cann and Collette (2014)

and Martin (2007) for reviews. Research has consistently shown that SWB is positively related to the two adaptive humor styles and negatively related to the two maladaptive humor styles (e.g., Ford, McCreight & Richardson, 2014; Martin et al., 2003). Martin et al. (2003), for instance, reported that the Ryff (1989) measure of subjective well-being related positively to affiliative and self-enhancing humor styles and negatively to a self-defeating humor style. Similarly, Kuiper, Grimshaw, Leite and Kirsh (2004) found that humor styles differentially related to measures of positive and negative affect. Self-enhancing and affiliative humor styles related to greater positive affect, whereas self-defeating and aggressive humor styles related to greater negative affect.

Cann, Stilwell, and Taku (2012) further demonstrated that subjective well-being is related more strongly to self-enhancing and self-defeating humor styles than to affiliative and aggressive humor styles. Cann et al. (2012) regressed subjective well-being on all four humor styles simultaneously and found that only self-enhancing and self-defeating humor styles were determined to be significant predictors. By framing the difficulties of life from a humorous perspective, people with a self-enhancing humor style remain happy even in the midst of adversity (Martin et al., 2003; Kuiper, Martin, & Olinger, 1993). In contrast, those with a self-defeating humor style may be particularly unhappy because others tend to avoid interacting with them, leaving them feeling socially isolated and rejected (Kuiper & McHale, 2009).

Humor Styles and Self-Esteem

James (1890) described self-esteem as a barometer that rises and falls as a function of one's aspirations and success experiences. Savin-Williams and Demo (1983) found that self-esteem fluctuated only around a stable self-concept. Thus, although momentary self-evaluations may be context dependent, people derive their overall sense of self-esteem by averaging feelings

about themselves across a number of different social situations. Trait self-esteem is stable over a period of time, whereas state self-esteem can change and fluctuate in different settings as described by Williams and Demo (1983).

Heatherington and Polivy (1991) developed a state self-esteem measure that was twenty-items in length after finding that Rosenberg's (1965) self-esteem scale (a measure of global self-esteem) was unsuitable for laboratory situations. Another criticism of Rosenberg's self-esteem scale was that it was measuring only one type of self-esteem instead of self-esteem in different settings. Heatherington and Polivy (1991) divided self-esteem into three separate concepts: appearance self-esteem, performance self-esteem and social self-esteem. Appearance self-esteem is composed of questions that measure how a person feels about their physical appearance (e.g., "I feel unattractive" and "I am pleased with my appearance right now."). Performance self-esteem is composed of questions that ask about how a person feels about their performance on upcoming tasks, or their abilities compared to others (e.g., "I feel confident that I understand things" and "I feel confident in my abilities."). Social self-esteem relates to how people feel about themselves in comparison to others (e.g., "I feel displeased with myself" and "I feel self-conscious.").

The adaptive humor styles correlate with trait self-esteem while the maladaptive humor styles do not. Martin et al. (2003) found that both affiliative humor and self-enhancing humor styles positively correlated with self-esteem. Martin et al. (2003) also found that both aggressive and self-defeating humor styles were associated with lower levels of trait self-esteem. Between the two maladaptive humor styles, aggressive humor comments lead to higher feelings of rejection and lower desire to continue interacting with the commenter than those who received a self-defeating humor comment (Kuiper et al., 2010). Aggressive humor may do more damage to the target of the comment but self-defeating humor does more damage to one's own self-esteem.

People who were using the self-defeating humor style were found to have damaged or derogatory view of self-perception. As a result, these people were reappraising themselves with a negative self-perception every time they were making self-defeating comments (Steiger, Formann & Burger, 2011).

On the contrary, those who had high trait self-esteem and used more positive reappraisals to view themselves used affiliative humor more (Liu, 2012). Ford et al. (2014) found that self-enhancing beliefs led to a greater use of affiliative humor and also predicted higher levels of self-esteem and lower levels of depression as found in Martin et al. (2003). This finding shows that those with depression are more likely to use maladaptive humor styles than adaptive humor styles because adaptive humor styles reinforce strong beliefs in oneself such as high self-esteem. Kuiper and McHale (2009) found that self-defeating humor mediates the relationship between endorsement of negative self-evaluative beliefs and low social self-esteem. This effect leads to people focusing more on their negative attributes and traits than their positive ones. These people that focus more on their negative traits will use self-defeating humor more and to a greater degree, and due to the effect of self-defeating humor proposed by Martin et al. (2003), will experience lower social self-esteem.

Humor Styles and Optimism

People's levels of hope fluctuate depending on situation, either feeling that good fortune or bad fortune. One of the positive consequences of using adaptive humor styles is optimism, while one of the negative consequences of using maladaptive humor styles is pessimism. Martin et al. (2003) found that the self-enhancing humor style positively correlated with optimism. Further studies found that those using self-enhancing humor were more likely to have higher scores on an optimism scale (Life Orientation Test – Revised) or be optimists in general (Ford et

al., 2014). It is likely that people who use self-enhancing humor are able to use the humor as an adaptive cognitive mechanism against stressful or unfortunate situations that they find themselves in. These self-enhancers are more likely to laugh at the situation, reappraise it and then find a way to accomplish the task or find a way out of the unfortunate situation. On the other end of the spectrum, those with self-defeating humor are prone to pessimism. People who habitually engage in self-defeating humor focus more on the negative aspects of their personality (Steiger et al., 2011), and they perceive their lives as more negative and stressful (Cann & Etzel, 2008).

Humor Styles, Depression and Anxiety

Martin et al. (2003) reported that the self-enhancing and affiliative humor styles facilitate coping with negative life circumstances, and thus negatively correlate with depression and anxiety. In contrast, self-defeating and aggressive humor styles exacerbate the psychological distress of negative life circumstances, and thus correlate positively with depression and anxiety (Ibarra-Rovillard & Kuiper, 2011; Samson & Gross, 2011). Kuiper et al. (2004) found that those with high levels of depressive symptoms used self-defeating humor styles frequently while engaging in low levels of affiliative or self-enhancing humor. It appears that the combination of a derogatory view of self and interpersonal difficulties make it difficult for depressed individuals to use the self-enhancing humor style effectively.

Cann et al. (2010) further demonstrated that the two intrapersonal styles (self-enhancing and self-defeating) are particularly strongly related to well-being. When they regressed measures of subjective well-being onto all four humor styles simultaneously only self-enhancing and self-defeating humor styles significantly predicted well-being.

The Present Research

The existing research on the relationship between humor styles and SWB largely has been non-experimental, treating humor styles, SWB and specific expression of SWB (e.g., self-esteem and anxiety) as stable personality variables in correlational studies. The present research expands on upon the current literature by treating humor styles as an independent variable in an experimental design. As a result, the present research addresses novel questions about the causal effects of engaging in positive and negative forms of humor on momentary (rather than trait) expressions of SWB. Specifically, I examined the effect of engaging in self-enhancing versus self-defeating humor on positive and negative affect, state anxiety and state self-esteem.

Based on findings from correlational studies described above, I derived two hypotheses. First, engaging in self-enhancing humor should increase positive affect and decreases negative affect, and it should increase state self-esteem and decrease state anxiety. Second, engaging in self-defeating humor should have the opposite effects. It should decrease positive affect and state self-esteem, and it should increase negative affect and state anxiety.

To test my hypothesis, I created a stressful role-play situation (taking a difficult “SAT like” math test). Subjects were told to reappraise the math test through self-enhancing humor, self-defeating humor or no humor. Participants were instructed how to reappraise the humor and then prompted to do so in that manner. Participants viewed cartoons and read jokes that were focused on math or math ability. The cartoons and jokes could be described as self-enhancing or self-defeating. Participants completed three measures of state well-being.

First, they completed Heatherington and Polivy’s (1991) State Self-Esteem Scale. Next, participants complete Spielberger et al’s. (1970) State anxiety scale, followed by Watson, Clark and Tellegan’s (1988) Positive and Negative Affect Scale (PANAS) and finally Martin et al’s

(2003) HSQ. I predicted that participants who engaged in self-enhancing humor would report lower state anxiety, greater overall state self-esteem and greater performance state self-esteem, greater positive affect, and less negative affect compared to participants in the no-humor control condition. In contrast, I predicted that participants who engaged in self-defeating humor would report lower state self-esteem, lower positive affect, greater state anxiety and greater negative affect compared to participants in the no-humor control condition.

CHAPTER THREE: METHODS

Participants and Design

One hundred and twenty three participants (forty three males and eighty females) completed this study through the online service *Mechanical Turk* (mTurk). Ages ranged from eighteen to seventy-four years old ($M = 38.38$). Among these 123 participants, 108 were Caucasian, six were African-American, two were of Hispanic/Latino descent, four were Asian and two identified themselves as a member of another race. Each participant received forty cents for a study that was described as “taking thirty minutes at the maximum.” Participants were randomly assigned to one of three experimental conditions with type of humor (self-enhancing, self-defeating, no-humor) serving as a between-subjects factor.

Procedure

Upon accessing the link to the study, participants read the following instructions:

In this study you will be asked to use your imagination. Please imagine that you will be asked to complete a difficult and stressful math test that consists of 30 "SAT-like" word problem questions. Before taking the math test, you will be asked to think about it from a different perspective than people normally might. Depending on the condition you're in, that could involve reading seven cartoons and telling a few jokes.

After consenting to participate, participants read instructions that introduced the type of humor manipulation.

Self-Enhancing Humor Condition

In the self-enhancing humor condition participants read the following instructions:

Please imagine that, for this hit, you are about to complete a difficult and stressful

math test that consists of 30 "SAT-like" word problem questions. I would like you to maintain a humorous perspective in the face of this stressful event. I want you to make fun of (find amusement in) the absurdity of this whole situation of being surprised with a math test. You got to admit, it would like a bad practical joke.

To help you make fun of this whole situation I want to give you a few cartoons and jokes that make fun of math tests and mathematics in general. As you put yourself in the situation of having to take a difficult math test, use the cartoons and jokes as a way to cope with the stressful situation and maintain a humorous, light-hearted outlook on the whole thing.

Participants then read four cartoons and four jokes that appraised math as either being inconsequential or absurd in some manner. For example, one cartoon featured a Peanuts character working on a word problem. The caption read, "Only in math problems can you buy 60 cantaloupes and no one asks, what the hell is wrong with you!" Similarly, one of the jokes read, "Q: If I had seven oranges in one hand and eight oranges in the other, what would I have? A: Big hands!"

Self-Defeating Humor Condition

In the self-defeating humor condition participants read the following instructions:

Please imagine that, for this hit, you are about to complete a difficult and stressful math test that consists of 30 "SAT-like" word problem questions. I want you to think about this situation in a humorous way that makes fun of your math ability and puts yourself down in the face of inevitable difficulty you're going to have with the test.

Rodney Dangerfield was a master at this kind of humor, of ingratiating himself by making fun of his own weaknesses. Here are a few jokes he made about his appearance to

give you an idea of what we're shooting for.

- "When I was born I was so ugly the doctor slapped my mother."

- "I was so ugly my mother used to feed me with a sling shot."

- "One year they asked me to be poster boy - for birth control."

To help you make fun of yourself and your math abilities like Rodney Dangerfield made fun of his appearance, I want to give you a few cartoons for you to relate to that make fun of being bad in math. As you put yourself in the situation of having to take a difficult math test, use the cartoons and jokes as a way to humorously put yourself down to lessen the sting of doing poorly on the test.

Participants then read four cartoons and four jokes that appraised math as either being difficult or insurmountable (for the participants' competency in math) in some manner. For example, one cartoon featured a man looking at his restaurant bill with the caption reflecting his thoughts, "How do some people manage to understand the mathematical principles behind the cosmos? I can't even add up a restaurant bill." Likewise, one of the jokes read, "I'm so bad in math I thought binary was a two-headed canary!"

In both the self-enhancing and self-defeating humor conditions, participants were given 10 seconds to read each of the four cartoons and four jokes before advancing to the next one. After reading all of the jokes, participants were instructed to type their favorite joke of the four—the one they would most want to tell a friend—into a text entry field.

It was important that the self-enhancing jokes and cartoons conform to the defining characteristics of the self-enhancing humor style more than the self-defeating ones, and that the self-defeating jokes and cartoons conform to the defining characteristics of the self-defeating humor style more than the self-enhancing ones. Therefore, 74 pilot participants (residents of the

USA recruited through Mechanical Turk) rated either the self-enhancing jokes and cartoons ($n = 38$) or the self-defeating jokes and cartoons ($n = 36$) on two self-enhancing items (“*This cartoon/joke makes fun of math tests and math in general,*” and “*This cartoon/joke humorously points out the absurdity of this imagined situation.*”) and two self-defeating items (“*This cartoon/joke makes fun of/disparages one’s math ability to make others laugh,*” and “*This cartoon/joke makes me sensitive to my own shortcomings in math.*”). Participants responded to each statement using a 7-point rating scale ranging from 1 (strongly disagree) to 7 (strongly agree). Responses to the self-enhancing items were averaged to form an aggregate measure of self-enhancing humor; responses to the two self-defeating items were averaged to form an overall measure of self-defeating humor.

As expected the self-enhancing jokes and cartoons were rated higher in self-enhancing humor ($M = 5.27$ $SD = 0.73$) than the self-defeating jokes and cartoons ($M = 4.75$, $SD = 0.86$), $F(1, 72) = 7.82$, $p < .01$. Similarly, the self-defeating jokes and cartoons were rated as more self-defeating ($M = 4.01$, $SD = 0.90$) than the self-enhancing jokes and cartoons ($M = 3.40$, $SD = 1.24$), $F(1, 72) = 6.02$, $p = .017$.

No Humor Condition

Participants in the no-humor control condition read these instructions:

Please imagine that, for this hit, you are about to complete a difficult and stressful math test that consists of 30 "SAT-like" word problem questions. Imagine how that would make you feel in this situation and complete the following questionnaires. As you complete the questionnaires, please continue to role-play. Please complete the questionnaires from the mindset you would have in this imagined context.

Dependent Measures

After experiencing the type of humor manipulation, all participants completed the dependent measures. In each condition, participants were given the following instructions: “As you complete the following questionnaires, please continue to role-play. Please complete the following questionnaires from the mindset you would have in the imagined context.” Participants proceeded to complete four questionnaires in this order: State Anxiety Scale, Watson, Clark & Tellegan’s (1988) Positive and Negative Affective Schedule (PANAS), Heatherington and Polivy’s (1991) State Self-Esteem Scale and Martin et al.’s (2003) Humor Styles Questionnaire.

State Anxiety Scale. Participants first completed Spielberger et al.’s (1970) State Anxiety Scale. They rated the extent to which they felt anxious, comfortable, jittery, worried, at ease, nervous and calm in the imagined context. Participants responded to each item using a rating scale ranging from 1 (Not at all) to 7 (Very much). We averaged responses to the seven items to form an aggregate measure of state anxiety associated with the imagined context. The Cronbach’s Alpha for the seven-item scale was .90. See Appendix A for a complete description of the state anxiety scale.

The State Self-Esteem Scale (SSES). Participants then completed Heatherington and Polivy’s (1991) State Self-Esteem Scale. The questions for the State Self-Esteem Scale are answered on a 4-point scale that ranges from 1 (not at all) to 5 (extremely). Previous research has reported a coefficient alpha of .92 (Heatherington & Polivy, 1991). Performance and social self-esteem each have seven items that accumulate to a score and appearance self-esteem has six items. I averaged responses to the twenty items to form an aggregate measure of state self-esteem associated with taking the math test, and also averaged responses from the performance self-esteem, social self-esteem and appearance self-esteem section to form

aggregate measures for each. Cronbach's alpha for the entire measure was .95. See Appendix C for a complete description of the State Self-Esteem Scale.

PANAS. Next, participants completed Watson, Clark and Tellegan's (1988) PANAS. The PANAS consists of 20 adjectives reflecting positive and negative emotions (e.g., Distressed, Excited, Upset, Enthusiastic). Participants indicated the extent to which they felt each of the emotions in the imagined context of the study. Participants responded to each emotion adjective using a rating scale ranging from 1 (very slightly or not at all) to 5 (extremely). I averaged responses from the ten items of positive affect to form an aggregate measure of negative affect associated with taking the math test. I did the same for the other ten items of positive affect to form an aggregate measure of positive affect. Cronbach's Alpha was .87 for the positive affect measure and .92 for the negative affect measure. See Appendix B for a complete description of the PANAS.

Humor Styles Questionnaire. Finally, participants completed Martin et al.'s (2003) Humor Styles Questionnaire. The Humor Styles Questionnaire consists of thirty-two questions with eight items measuring each of the four humor types. The scale uses a ranking system from 1 (totally disagree) to 7 (totally agree) to measure the level of humor style within each person. For the purposes of this study, only the self-enhancing and self-defeating humor styles questions were used. The sums of responses for self-enhancing and self-defeating humor were used because prior research has used the sum to report humor style scores. The Cronbach's alpha for the self-enhancing portion of the HSQ was .86 and the Cronbach's alpha for the self-defeating portion of the HSQ was .87. See Appendix D for a complete description of the Humor Styles Questionnaire.

CHAPTER FOUR: RESULTS

Humor Styles

To examine if humor styles, as an individual difference variable, differed across the experimental conditions, I conducted a one-way ANOVA on self-enhancing humor and on self-defeating humor as measured by the HSQ with the type of humor manipulation serving as the between-subjects variable. There was a significant effect of the type of humor manipulation on self-enhancing humor, $F(2, 120) = 5.57, p = .005$. Post-hoc comparisons using Tukey's HSD test revealed that participants in the self-enhancing humor condition reported greater habitual use of self-enhancing humor ($M = 39.72, SD = 8.22$) than participants in the no-humor control condition ($M = 35.56, SD = 8.10$), $HSD = 4.17, p = .047$. Interestingly, participants in the self-defeating humor condition also reported greater habitual use of self-enhancing humor ($M = 41.10, SD = 7.36$) than participants in the no-humor control condition, $HSD = 5.54, p = .005$. There was no difference in the habitual use of self-enhancing humor between participants in the self-enhancing humor condition and participants in the self-defeating humor condition, $HSD = 1.38, p = .72$. Finally, there was no effect of the type of humor manipulation on dispositional self-defeating humor, $F(2, 120) = 2.26, p = .11$.

I also computed the correlations between the dispositional humor styles and each of the dependent measures (see Table 1. Correlations for all Dependent Measures in Appendix E). As shown self-defeating humor style correlated positively with state anxiety, negative affect and self-enhancing humor. Self-defeating humor also correlated negatively with state self-esteem and each of the three components of state self-esteem. State self-esteem correlated positively with all three components of the State Self-Esteem Scale as well as positive affect. State Self-Esteem

correlated negatively with negative affect. Performance state self-esteem correlated positively with Social and Appearance state self-esteem and positive affect. Performance state self-esteem correlated negatively with negative affect. Social state self-esteem correlated positively with Appearance state self-esteem and positive affect. Appearance state self-esteem correlated positively with both positive and negative affect.

Because self-enhancing humor style varied as a function of experimental condition, and because self-defeating humor style related to all but one of the dependent variables, I treated both humor styles as covariates in my analyses of the dependent measures. I subjected each dependent measure to a one-way analysis of covariance (ANCOVA) with type of humor (self-enhancing, self-defeating, no humor control) serving as the between-subjects factor. I enumerated on significant effects of type of humor by conducting planned comparisons derived from my hypotheses using an independent samples t-test based on the error term pooled from the complete experimental design.

Anxiety

The results of the one-way ANCOVA revealed a significant effect of type of humor, $F(2,118) = 15.93, p < .001$. In keeping with my hypothesis, planned comparisons further revealed that participants in the self-enhancing humor condition reported less state anxiety ($M = 3.79, SD = 1.45$) than participants in the no-humor control condition ($M = 5.36, SD = 1.05$), $t(118) = 5.93, p < .001$ or participants in the self-defeating humor condition ($M = 4.90, SD = 1.09$), $t(118) = 4.05, p < .001$. Finally, there was not a significant difference in state anxiety among participants in the self-defeating humor condition and participants in the no-humor control condition, $t(118) = 1.90, p = .074$. See Appendix F for Figure 1. State Anxiety by Condition.

State Self-Esteem

The results of the one-way ANCOVA revealed a significant effect of type of humor, $F(2,118) = 3.09, p < .001$. Other planned comparisons revealed that participants in the self-enhancing humor condition reported higher state self-esteem ($M = 3.52, SD = .78$) than participants in the self-defeating humor condition ($M = 2.98, SD = .84$), $t(118) = 3.35, p < .001$ or participants in the no humor control condition ($M = 3.08, SD = .74$), $t(118) = 2.80, p < .01$. Finally, there was not a significant difference in state self-esteem among participants in the self-defeating humor condition and participants in the no-humor control condition, $t(118) = .61, p = .54$. See Appendix F for Figure 2. State Self-Esteem by Condition.

A one-way ANCOVA showed a significant effect of type of humor on *performance* state self-esteem $F(2, 118) = 6.25, p = .003$. The further results of the one-way ANCOVA revealed that self-defeating humor, $F(1,118) = 12.58, p = .001$ had a significant effect as a covariate on performance self-esteem. As predicted, participants who engaged in self-enhancing humor ($M = 3.60, SD = .83$) reported higher performance self-esteem than those who engaged in self-defeating humor ($M = 2.87, SD = .98$), $t(118) = 3.92, p < .001$ or no humor ($M = 2.94, SD = .79$), $t(118) = 3.60, p = .001$. There was not a significant difference in performance self-esteem among participants in the self-defeating humor condition and participants in the no humor control condition $t(118) = .40, p = .69$. A one-way ANCOVA showed no significant effect of type of humor on *social* state self-esteem, $F(2, 118) = 1.18, p = .31$. A one-way ANCOVA showed no significant effect of type of humor on appearance state self-esteem, $F(2, 118) = .92, p = .52$. See Appendix F for Figure 3. Performance State Self-Esteem by Condition.

Positive and Negative Affect

A one-way ANCOVA showed a significant effect of type of humor on negative affect F

$(2,118) = 7.83, p < .001$. A second one way ANCOVA revealed a significant effect of self-defeating humor on negative affect, $F(1, 118) = 13.73, p < .001$. Further analysis supported my hypothesis that those participants who engaged in self-enhancing humor had less negative affect ($M = 1.64, SD = .67$) than those who engaged in either self-defeating humor ($M = 2.13, SD = .96$), $t(118) = 4.43, p < .001$ or the no humor ($M = 2.44, SD = .93$), $t(118) = 2.62, p < .001$. There was no difference between the self-defeating humor condition and the no humor condition in contrast tests $t(118) = 1.76, p = .08$. Meanwhile, results found through a one-way ANCOVA that the effect of type of humor on positive affect was not significant, $F(2,118) = 1.43, p = .24$. This result does not support my hypothesis, as it was expected that those who engaged in self-enhancing humor would have increased positive affect relative to those who engaged in self-defeating humor or the no humor control condition. See Appendix F for Figure 4. Negative Affect by Condition.

CHAPTER FIVE: DISCUSSION

The results of this study support my hypothesis that those who engage in self-enhancing humor will report lower state anxiety associated with a stressful event, higher state self-esteem and less negative affect than those who engage in self-defeating humor or no humor at all. People who engaged in self-enhancing humor had lower anxiety about the upcoming math test, lower negative affect, and higher performance and social state self-esteem than those who engaged in self-defeating humor or no humor at all. These results are consistent with the original definition of self-enhancing humor provided by Kuiper, Martin & Olinger (1993) describing self-enhancing humor as: “a tendency to be frequently amused by the incongruities of life, and to maintain a humorous perspective even in the face of stress or adversity.” The research also supports a view of self-enhancing humor maintained by Martin et al., (2003) in that self-enhancing humor could act as a buffer and is related to coping sense of humor. The results also make a similar conclusion to that of Ford et al., (2004) that a self-enhancing humor style might function to reduce state anxiety in those who use it.

There was no significant difference between self-defeating humor and no humor in any of the measures. This could potentially be due to the construct of self-defeating humor compared to self-enhancing humor. Martin et al. (2003) describes self-defeating humor’s utilization as an attempt to gain favor with others. This study had no manipulation with social consequences (ridicule, teasing, etc.). Therefore, according to the self-defeating humor definition provided by Martin et al. (2003), I did not fill the criteria needed to examine its consequences. A further study could produce a social manipulation and examine the effects of self-defeating humor compared to no humor or aggressive humor.

Positive Humor Styles as a Strategy Rather than a Disposition

The present study is the first to explicitly manipulate humor styles conceptualized by Martin et al. (2003). Accordingly, the findings extend the existing literature on the relationship between humor styles and subjective well-being in an important way. They suggest that at least momentary benefits of a self-enhancing humor style on subjective well-being can be attained by actively engaging in self-enhancing humor (regardless of one's humor style as a personality variable). Thus, positive humor styles can be conceptualized as an adaptive strategy for regulating subjective well-being and not just a static personality trait reflecting stable behavioral patterns.

Two other previous studies have similarly investigated humor as a strategy for regulating well-being. Maiolino and Kuiper (in press) found engaging in a humorous exercise can positively affect well-being. Maiolino and Kuiper asked participants to describe their own positive humorous experiences over the previous two weeks, provide examples of when they were grateful, or reflect on and “savor” positive experiences over the previous two weeks. Participants in a control condition described events that had occurred during the two week period. Participants reported more positive well-being following the humor writing exercise as well as the “gratefulness exercise” and the “reflect and savor” exercise compared to the control condition. The benefits of the humor writing exercise were accentuated among participants high in dispositional self-enhancing and affiliative humor styles.

In addition, Samson and Gross (2011) explored the effects of positive and negative humor on emotion regulation. Samson and Gross (2011) had participants look at 30 negative photos in two separate trials. During the second trial, Samson and Gross (2011) had participants reappraise the pictures using no humor, positive humor or negative humor. The positive and

negative humor conditions used terminology from the humor styles literature. In this study, positive humor was similar to self-enhancing humor (“reappraise the pictures by experiencing a sympathetic, tolerant, and benevolent amusement, focusing on the imperfections of life and human beings or on absurdities of the situation without becoming hostile or depreciating.”) or aggressive humor (“participants were instructed to laugh at these situations in a hostile, superior way, mocking others in order to create an emotional distance.”). Samson and Gross (2011) found that positive humor led to increases in positive emotions and negative humor led to increases in negative emotions. Although Samson and Gross (2011) displayed some manipulation of humor styles, they used a limited set of negative images that were seen on a trial before the humor manipulation and it is not clear whether their descriptions led people to reappraise the situation within the specific type of humor they wanted or if it was some other form of positive or negative humor. Despite viewing humor styles in conceptually different ways, these two other studies plus this research add to a growing literature of the positive consequences of using humor, specifically within the self-enhancing humor style.

Also, the combination of these three studies suggests that there is a causal relationship between engagement in positive humor and beneficial consequences to one’s psychological well-being in state based measures. However, different to the other studies, this specific study suggests that the humor styles themselves can be applied and manipulated. This shift in paradigm would expand the model from conceptualizing humor styles as only a personality variable and moving it to a new concept, that could be conceptually manipulated.

The implications of this are that people could be forced into engaging in humor within the bounds of each particular style and their behavioral consequences can be measured. This study takes the first step in that approach by examining the consequences of self-enhancing and

self-defeating humor on people.

Collectively, the results of these studies raise the possibility that, regardless of one's dispositional humor style, people can learn to engage in positive forms of humor to regulate their emotions and sense of subjective well-being.

Limitations and Directions for Future Research

This study does contribute to the literature of humor styles, subjective well-being and provides a mechanism to manipulate humor styles in the experimental conditions, however the study does have limitations. First, the study was an online study without any interaction in person. There are several different factors that could have skewed the data in different manners including fatigue, lack of attention to stimuli and not understanding the humor manipulations.

Also, the study was conducted as a role-play study. Participants may not have put themselves in the appropriate “imaginative” state to entertain the thought of taking a difficult SAT like math test despite having a 2 practice problems to help them enter that state. Participants may have answered questions truthfully but may have reverted back to the instructions given to them on the consent form that they will not be taking a math test and that they were participating in a role-play study. Potential future research could have participants complete similar instructions in person rather than online.

Lastly, participants actually did not take an SAT like math test. Although previous research (Ford et al., 2012) suggests that factors such as state anxiety are related to performance on math test and coping sense of humor. Ford et al. (2012) found that state anxiety mediated the effect between a humor manipulation and performance on a word problem math test. In this study, we do not know if participants kept in mind that they would not actually have to take a math test while completing the study online. Secondly, is it just adaptive humor that promotes

less anxiety in the face of a math test? The findings of this study suggest that only self-enhancing humor would create lower state anxiety associated with taking the math test, but could other forms of adaptive humor (such as affiliative humor) have the same effect? A follow up study would need to be completed accounting for this limitation, with participants completing the math test and measures of anxiety before the test and performance on the test being measured. Another study could replicate the procedures of this study but change the humor manipulation. Instead of self-defeating and no humor, those conditions would be replaced with affiliative humor.

Conclusion

Previous research on humor styles has suggested that intrapersonal humor styles have the greatest impact on personality traits such as subjective well-being (Cann & Etzel, 2008). However, this study presents a new direction, and a new foundation for humor styles based research, creating scenarios where participants are forced to use a specific humor style. In creating this environment, this research suggests that engagement in self-enhancing humor causes a difference in psychological states similar to that of the personality traits it is proposed to be related to in prior humor styles research (Martin et al., 2003, Cann et al., 2012.).

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APPENDIX A: STATE ANXIETY SCALE

1. How difficult do you think the math test will be?
2. How anxious do you think you would feel while taking the math test?
3. How comfortable do you think you would feel while taking the math test?
4. How jittery do you think you would feel while taking the math test?
5. How worried do you think you would feel while taking the math test?
6. How at ease do you think you would feel while taking the math test?
7. How nervous do you think you would feel while taking the math test?
8. How calm do you think you would feel while taking the math test?
9. To what extent do you consider yourself to be good in mathematics?

Scale:

1	2	3	4	5	6	7
Not at all						Very difficult

APPENDIX B: PANAS

This scale consists of a number of words that describe different feelings and emotions. Please use the following scale to indicate the extent to which you would feel each of the emotions **in the imagined context of this study**. Indicate your answer using the scale appearing below each emotion.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a Bit	Extremely

Interested
Distressed
Excited
Upset
Strong
Guilty
Scared
Hostile
Enthusiastic
Proud
Irritable
Alert
Ashamed
Inspired
Nervous
Determined
Attentive
Jittery
Active
Afraid

APPENDIX C: STATE SELF-ESTEEM QUESTIONNAIRE

This is a questionnaire designed to measure your thoughts about yourself **as if you were in the imagined context of this study**. There is of course, no right answer for any statement. The best answer is what you feel would be true of yourself **in the imagined context**.

Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions, as if they are true for you **IN THE IMAGINED CONTEXT**

1	2	3	4	5
Not at all	A little bit	Somewhat	Very much	Extremely

1. I feel confident in my abilities
2. I am worried about whether I am regarded as a success or failure
3. I feel satisfied with the way my body looks right now
4. I feel frustrated or rattled about my performance
5. I feel that I am having trouble understanding the things that I read
6. I feel others respect and admire me
7. I am dissatisfied with my weight
8. I feel self-conscious
9. I feel as smart as others
10. I feel displeased with myself
11. I feel good about myself
12. I am pleased with my appearance right now
13. I am worried about what other people think of me
14. I feel confident that I understand things
15. I feel inferior to others at the moment
16. I feel unattractive
17. I feel concerned about the impression that I am making
18. I feel that I have less scholastic ability right now than others
19. I feel like I'm not doing well
20. I am worried about looking foolish

APPENDIX D: HUMOR STYLES QUESTIONNAIRE

Below is a list of statements describing different ways in which humor might be experienced. Please read each statement carefully, and indicate the degree to which you agree or disagree with it. Please respond as honestly and objectively as you can. Use the following scale:

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

1.If I am feeling depressed, I can usually cheer myself up with humor.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

2.I let people laugh at me or make fun at my expense more than I should.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

3.Even when I'm by myself, I'm often amused by the absurdities of life.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

4.I will often get carried away in putting myself down if it makes my family or friends laugh.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

5.If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

6.I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

7.My humorous outlook on life keeps me from getting overly upset or depressed about things.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

8.I don't often say funny things to put myself down

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

9.If I'm by myself and I'm feeling unhappy, I make an effort to think of something funny to cheer myself up.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

10.I often go overboard in putting myself down when I am making jokes or trying to be funny.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

11.If I am feeling sad or upset, I usually lose my sense of humor.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

12.When I am with friends or family, I often seem to be the one that other people make fun of or joke about.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

13.It is my experience that thinking about some amusing aspect of a situation is often a very effective way of coping with problems.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

14.If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest friends don't know how I really feel

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

15.I don't need to be with other people to feel amused – I can usually find things to laugh about even when I'm by myself

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

16.Letting others laugh at me is my way of keeping my friends and family in good spirits.

Totally	Moderately	Slightly	Neither Agree	Slightly	Moderately	Totally
Disagree	Disagree	Disagree	nor Disagree	Agree	Agree	Agree

APPENDIX E: TABLES

Table 1. Correlations for measures of state anxiety, global state self-esteem, performance self-esteem, social self-esteem and appearance self-esteem, positive and negative affect and self-enhancing and self-defeating humor.

Trait	1	2	3	4	5	6	7	8	9
1. ANX	----								
2. GSSE	-.55**	----							
3. PERF_SE	-.57**	.90**	----						
4. SOC_SE	-.48**	.93**	.74**	----					
5. APP_SE	-.40**	.85**	.63**	.71**	----				
6. POSAF	-.27**	.34**	.38**	.17	.42**	----			
7. NEGAF	.58**	-.60**	-.64**	-.60**	.31**	-.12	----		
8. SE-H	-.04	-.07	.07	.04	.09	.11	.02	----	
9. SD-H	.21*	-.43**	-.32**	-.45**	-.37**	.04	.35**	.25**	----

Note: ANX = State Anxiety, GSSE = Global State Self-Esteem, PERF_SE = Performance Self-Esteem, SOC_SE = Social Self-Esteem, APP_SE = Appearance Self-Esteem, POSAF = Positive Affect, NEGAF = Negative Affect, SE-H = Self-Enhancing Humor Style SD-H = Self-defeating Humor Style, * $p < .05$. ** $p < .01$.

APPENDIX F: FIGURES

Figure 1. Mean state anxiety scores as a function of the type of humor manipulation.

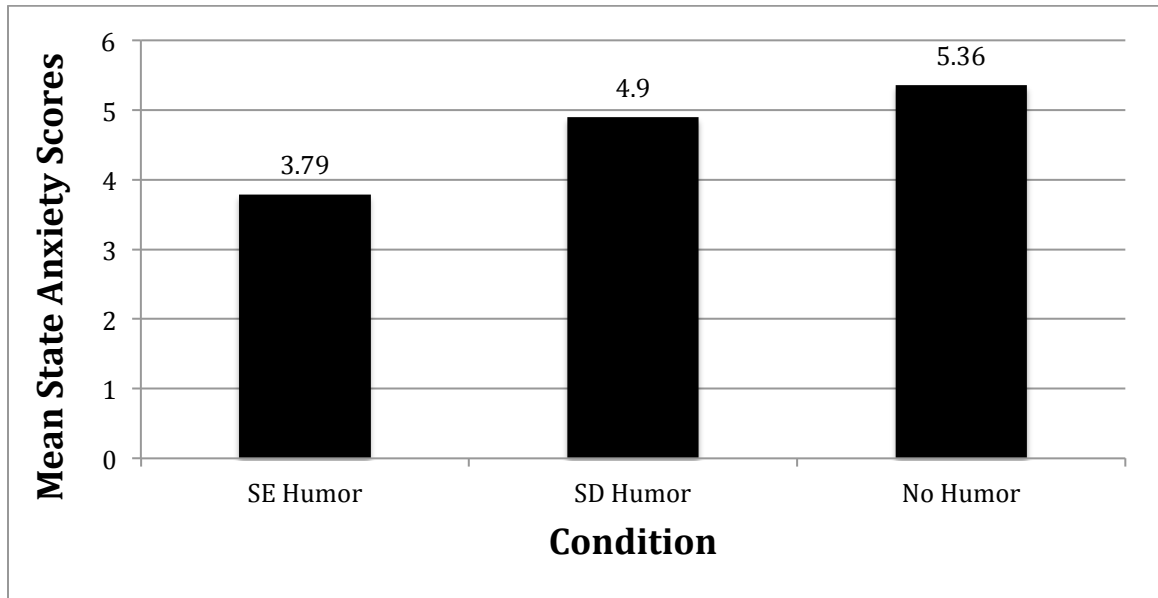


Figure 2. Mean state self-esteem scores as a function of the type of humor manipulation.

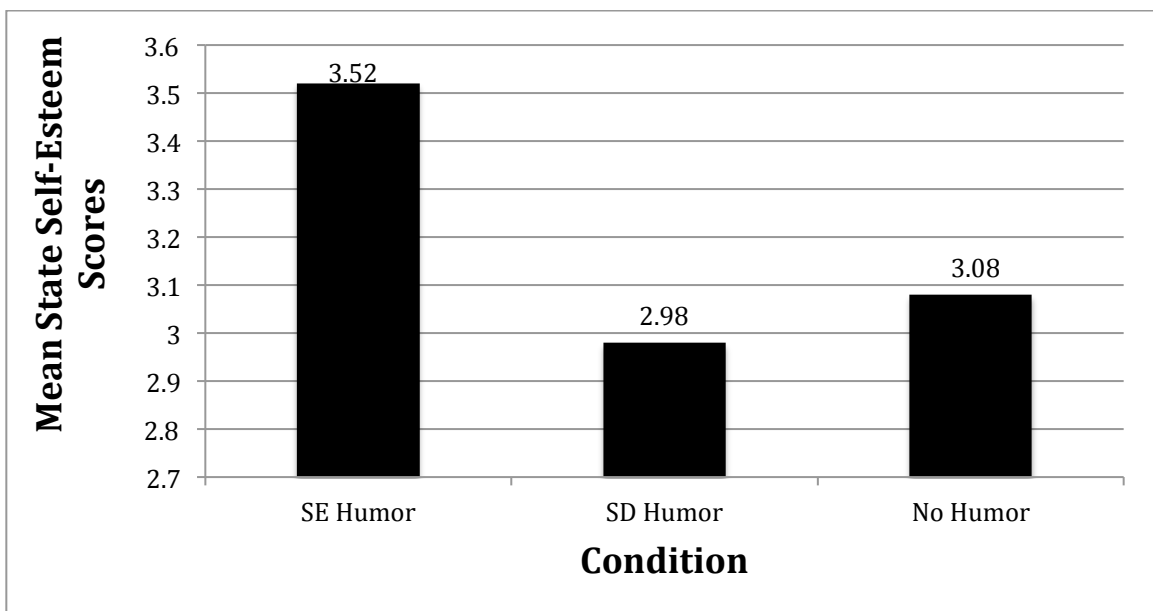


Figure 3. Mean performance state self-esteem scores as a function of the type of humor manipulation.

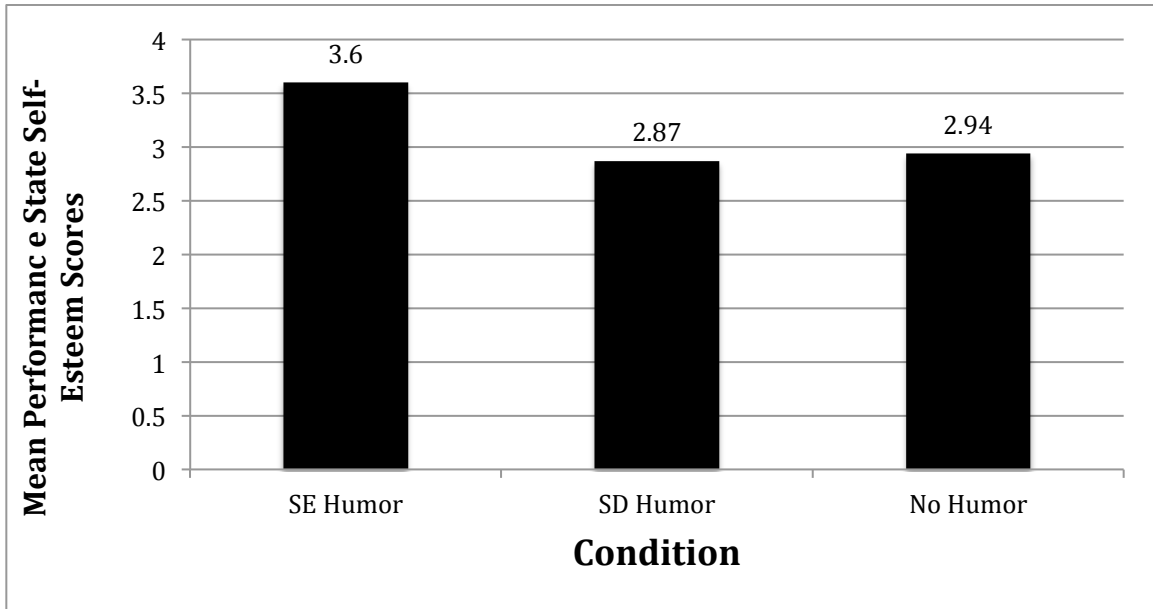


Figure 4. Mean negative affect scores as a function of the type of humor manipulation.

